



*The women's group of Darou Mbapp used profits earned from the sale of seedlings to acquire a grain mill*



*Construction of stone bunds to control water erosion has become a sustaining activity in the Rural Community of Kayemor*



*Members of the women's group San Soto in their vegetable garden*

## "Increasing private sector incomes from sustainable and decentralized management of natural resources"

Like its neighboring countries in the Sahel, Senegal was hit by a serious drought in the late 1960's. Since that time, Senegal's ecology has changed under the influence of dramatic threats to the environment. Average annual rainfall has decreased, agricultural production is down, livestock mortality has increased, and the country's forest resources are disappearing.

Initial measures to combat the situation concentrated on large-scale, government-controlled reforestation projects. When these had little long-term impact, the government and international assistance turned to integrated programs that went beyond tree planting and gave more responsibility to the local populations.

Lessons learned during the implementation of projects, such as the Senegal Reforestation Project (USAID 685-0283), led to the design of the Community-Based Natural Resources Management (CBNRM) Project, whose mission is to promote participatory and rational natural resources management (NRM) in Senegal. Implemented since October, 1994, the CBNRM Project has developed and promoted a process to increase local community participation in the identification, planning, use and conservation of natural resources. Implementation in three successive groups ("generations") of Rural Communities (administrative units, similar to a county) has allowed the Project to refine and perfect its process, based on locally identified constraints and needs.

The Government of Senegal initiated a far-reaching transformation in the structure and powers of local governance, through its Decentralization laws, in effect since 1997. This has strengthened the CBNRM Project in its approach of developing partnerships and giving responsibility to local communities. The Project provides key support for USAID/Senegal's 1998-2006 Country Strategic Plan, and particularly by its Strategic Objective #2: *more effective, democratic, and accountable management of services and resources in targeted areas*. The CBNRM Project serves as an instrument for implementing both Senegalese policy and USAID strategy.

The CBNRM Project designs and manages its activities in light of its results framework (see next page) that was designed after identification of the major constraints to empowering local institutions and populations in the domain of NRM. Performance indicators were selected to identify and measure trends of community participation in NRM over a 3-4 year period within communities collaborating with the Project. Data for measuring progress come from the Project's monitoring system, maintained on a routine basis by Project partners, as well as systematic national surveys and household surveys that are conducted in participating rural communities. This data is integrated in order to provide information used to improve the Project's decentralized land use planning and management process. This process guides Project activities at the Rural Community level.

*Information from the Project's local monitoring system helps entrepreneurs plan the number of seedlings that need to be produced to meet local demand*



# The process

The CBNRM Project's decentralized land use planning and management process provides an opportunity for socioeconomic development, while responding to the degradation of agricultural and ecological conditions. Sustainable and self-managed development is promoted. Particular attention is paid to women's participation and to the creation of partnerships between target groups and local technicians who assist with the implementation of the process.

## Phase I: Awareness building/Information

Senegal's 320 Rural Communities vary in size and population density. The average population of a Rural Community is approximately 16,000 with 20 to 100+ villages. The CBNRM Project selects Rural Communities based on their interest in participating in the Project as well as geographic, socioeconomic and environmental factors.

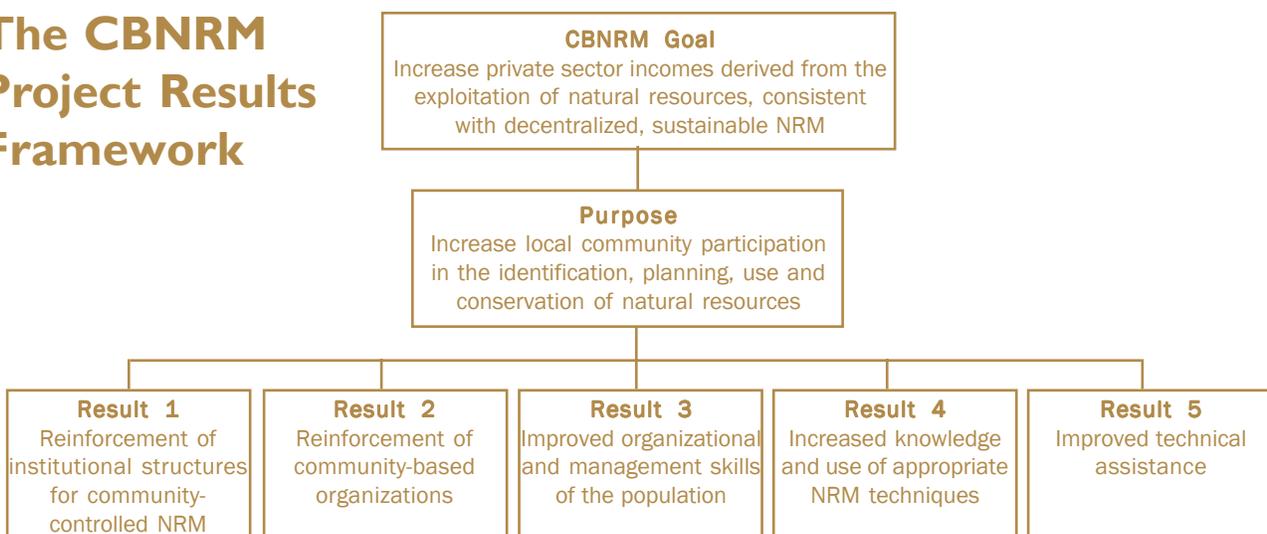
### Operational Objectives met:

- ◆ 20 Rural Communities selected for participation
- ◆ Communication campaign activities for national awareness building about the CBNRM Project and NRM issues continue in the 20 Rural Communities. 263 out of 294 activities have been conducted

After a Rural Community is selected, a communication campaign starts in the locally identified zones of the community. This helps new partners and clients understand the Project's strategy and methodology, and elicits greater participation by populations in the management of local affairs. The campaign provides the information necessary for the democratic and transparent election of members to NRM committees and subcommittees. Members represent various sectors of civil society across a range of socioeconomic categories found in the Rural Community. These committees assist the Rural Council (elected government body at the Rural Community level) in NRM decision-making and are key for local CBNRM Project implementation.

On the national level, the CBNRM Project carries out important communication activities to inform the nation, as a whole, of environmental and NRM-related news and events. In 2000, 80% of coverage of NRM and environmental issues on national TV was produced or co-produced by the Project's audiovisual unit. Development of sustainable revenue-generating activities based on NRM is promoted. In 2001, an emphasis is being placed on the new economic and regulatory environment that favors private business specialized in NRM.

## The CBNRM Project Results Framework



## Closing the gap...

In rural Senegal women have traditionally not had the same access as men to information, technical advice, land, and credit. The CBNRM Project is helping to close this gap through its decentralized land use planning and management process.

- ◆ the Project's emphasis on functional literacy has touched thousands of women in the participating Rural Communities
- ◆ 32% of leading (1st) wives have undergone training carried out by the Project (Senegal is a predominantly polygamous society)
- ◆ nearly half have participated in Project organized meetings
- ◆ 73% have reported improvements in their associations thanks to Project training and support



*Women gain new skills during training provided to NRM Committees in Financial and Administrative Management*

- ◆ a third are directly involved in the implementation of their Rural Community's land use management plan

## Phase 2: Organizational support

Phase 2 provides institutional reinforcement of local structures for community-based NRM. Training and communication activities are conducted to assure that the NRM committee and subcommittees can democratically, effectively and efficiently participate in Project activities and manage the funds for which they are responsible. Under the supervision of the Rural Council, the NRM committee coordinates dialogue and decision making for the implementation and monitoring of development programs and subprojects, funded through cost-sharing grants. With Project assistance, committees plan and implement awareness campaigns throughout their area to inform the public about Project activities and to recruit local rural community animators, who facilitate NRM Committee activities.

A pool of trainers made up of local partners is identified during phase 2. This group receives in-service training and helps develop and implement a local training plan, based on identified needs. Functional literacy classes that target a wide array of local leaders (especially women) also begin during this phase. Class content stresses management basics and NRM technologies.

### Operational Objectives met:

- ◆ 20 democratically elected NRM committees
- ◆ 6,796 participant units (one individual participating in one training activity) have been completed during 84 training sessions and 175 literacy classes:
  - Module 1: Strengthening the capacity of rural community animators
  - Module 2: Training of trainers to develop local pools of trainers
  - Module 3: NRM Committee administrative and financial management
  - Module 4: Financial management of grants funds
  - Module 5: Participatory communication techniques
  - Module 13: Functional literacy\*
  - Module 14: Financial and Administrative management of local government
- ◆ Communication campaign to support local NRM committee needs, continues in the 20 Rural Communities. 147 out of 163 activities have been conducted

\*managed and/or facilitated by local partners

## Phase 2 results to date:

- ◆ **89%** of NRM Committees meet strict criteria to be judged operational
- ◆ **95%** of NRM Committees manage their budgets according to accepted procedures (up from 67% in '98 and 80% in '99)
- ◆ **Target surpassed** concerning the NRM Committees' positive influence on the performance of the Rural Council (according to the general public)
- ◆ **Greater than expected** number of local organizations demonstrate sufficient management capacity in terms of their subproject activities



*Financial monitoring by local service providers has strengthened NRM Committees' management skills and improved their performance*

## Local impact of organizational support...

The NRM Committee of Tomboronkoto (2nd generation) is a committee that works. Since its establishment in 1997, the committee has received CBNRM Project organizational support and training, plus technical support from local extension agents. The Committee has put this to good use for planning and monitoring activities stemming from the local land use management plan that they developed with Project assistance.

The Committee meets monthly. It provides appreciated routine technical advice to the Rural Community's farmers and herders during visits to NRM sites. This assistance has improved the chances for success of local activities such as those of the Néma economic interest group, which suffered from poor organization and marginal planning before its involvement in the CBNRM Project. The NRM Committee also actively promotes registration of land with the Rural Council in order to secure land rights for groups and individuals prior to their tree-planting or other land improvements.

Participation in training offered by the Project has opened the way for new leadership roles for NRM Committee members. For example, Mamadou Dionne was elected president of the Rural Council in 1998. Formerly treasurer of the NRM Committee, Mr. Dionne declares that the skills acquired during his tenure ensure appropriate administrative and financial management of the Rural Community's resources and that these skills are recognized and respected at the regional level.



*Members of the Tomboronkoto NRM committee pose during a break in training in how to prepare the Rural Community's land use management plan*

## Phase 3: Land Use Management Plan development

Community-based NRM requires that village communities be at the center of the decision-making process. A participatory, NRM committee-led process is used to prepare a land use management plan (LUMP) for the rural community. The plan is formulated by the populations with assistance from local extension agents and outside service providers. It is a strategic planning document that clarifies NRM-related constraints and opportunities and identifies activities to be carried out throughout the Rural Community.

Since 1997, the LUMP has been mandated by laws regarding transfer of power to regions, communes, and Rural Communities. Communication Campaign No. 3, which touches phases 3-5 and promotes LUMP development and implementation, helps inform the public about decentralization policy and what it means at the local level.

Information and awareness building activities accompany the LUMP development process. After extensive public approval, an implementation plan is established for a three-year period. It organizes interventions around a central theme, or subproject, and specifies the nature, dimensions, locations and costs of the various integrated activities. Each subproject is made up of two types of activities, those targeting improved NRM (with long term financial returns) and those targeting short term revenue generation based on NRM. A local monitoring system is put into place at this time to monitor activity implementation and achievement of results.

### Operational Objectives:

- ◆ 20 LUMPs developed
- ◆ 423 participant units completed, as targeted, for training:
  - Module 6: Development of land use management plan
  - Module 10: Monitoring-Evaluation-Planning
- ◆ 20 monitoring systems in place
- ◆ 147 of 163 communication activities and productions have been completed for Phases 3-5 as part of Campaign No. 3, to promote LUMP development and implementation

### Results to date:

- ◆ **36%** of female survey respondents in the first generation of rural communities participate in NRM awareness building and promotion activities (up from 26% in 1997)
- ◆ **4 of 6 targets met or surpassed** regarding knowledge of NRM codes and policies



*Participatory mapping exercises are conducted to identify the location of NRM-related constraints and opportunities and to pinpoint where activities should take place. These maps help the population visualize how improved NRM interventions can affect the surrounding environment and the Rural Community as a whole.*

## Human Resources Development

The CBNRM Project helps participating Rural Communities identify and prioritize their NRM-related constraints and define appropriate strategies to resolve them. The Project also promotes private, self-managed initiatives that contribute to local economic growth and supports government policies to decentralize authority for NRM-related issues. The Project's Education and Training Program and communications activities are key for these efforts.

The Education and Training Program targets local elected leaders and members of local institutions, village or peasant organizations and the villagers, in general, as well as agents of participating technical ministries and public agencies that play an essential role in technical assistance and guidance. The long-term objective of the program is to transmit the appropriate methodological tools and technical abilities to local communities so they can meet the Project's goal and objectives.

Local Training Plans are designed and implemented in each district (comprising 3-4 Rural Communities). Many training activities are carried out by a local pool of trainers who have been prepared by the Project. These trainers meet more than just Project-related demands and help reinforce development efforts in their Rural Communities.

Motivating and informing the public about CBNRM Project activities and opportunities, improved NRM technologies, and relevant laws is crucial to Project success. Each NRM Committee has an Information/Communication Commission that performs this task in the Rural Community. The Project offers support to the commissions for planning and implementing activities that include communication campaigns, village meetings, rural radio programs and presentations/discussions of Project-produced videos.

The Project produces support materials in French and local languages. These materials are used to inform the public about issues such as the CBNRM Project process and decentralization policies. Some provide technical information for participants in land use management plan activities. They are also used in Project-sponsored functional literacy classes.

Audiovisual materials are also produced to inform the general public about the Project's decentralized land use planning and management process and local groups' success stories.



*District training activities provide an opportunity for participants from different Rural Communities to share their experiences of working with the Project's process*



*Particular attention is paid to promoting women's full participation in Project activities. A special unit exists within the Human Resources Development component which focuses on gender issues*



## Phase 4: Identification of participants through competition

The implementation of the LUMP builds local decision-making and management capacities. The Project works with the Rural Council and the NRM committee to draw up contracts that specify reciprocal commitments. Awareness-building activities are conducted and potential participants (economic interest groups, women's promotion groups, and associations) receive training and support in preparing their submission proposals. Winning proposals are selected by the NRM Committee and the Rural Council, based on established criteria.

### Operational Objectives:

- ◆ The number of subproject participants to be identified on a competitive basis was not predetermined. 185 contracts have been signed to date with organized groups and

## Sharing a vision

Through the implementation of its decentralized land use planning and management process, the CBNRM Project promotes adoption of improved NRM technologies through training, awareness-building, technical and financial support, and the creation of model sites. The task of establishing models is challenging given the Project commitment to activity implementation by local stakeholders. Fortunately, in many rural communities, the Project has motivated members of the local NRM committees who share the vision for local change.

Thierno Diallo is vice-president of the NRM Committee of Missirah, a third generation rural community that started implementing Project-supported NRM activities in 2000. Mr. Diallo is setting an outstanding example of the benefits to be gained from improved NRM by transforming his fields into a model site. Mr. Diallo has so far planted 220 mango seedlings that are carefully protected and show every sign of achieving a very high survival rate. He has constructed a compost production pit that will produce 24 cubic meters every 2-3 months to fertilize his peanut and millet fields.

These activities are included in an integrated package (called a subproject) of the local land use management plan and Mr. Diallo has thus received some financial support from the NRM committee. In addition, he has personally invested in the construction of a well at his orchard.

In order to secure the future benefits of the improvements he is introducing in his fields, Mr. Diallo is in the process of obtaining official Rural Council recognition for his land holding. The Project works with local leaders to implement land tenure policies and to resolve conflicts.

Mr. Diallo's efforts, during the first year of Project-supported NRM activities, have created lots of interest among local farmers. Many have come to see and learn from what is taking place in his fields.



*Thierno Diallo installed a well to ensure proper maintenance of seedlings planted in collaboration with the CBNRM Project*

## Phase 5: LUMP implementation

Phase 5 consolidates and capitalizes on all the achievements of the preceding four phases. Training, communication, monitoring and technical support activities continue during this phase to ensure the continuity and perpetuation of the decentralized land use and planning process.

Subproject activities are carried out progressively, as participants follow the implementation plan. Project-supported training targets private subproject entrepreneurs, as well as NRM committees. LUMP implementation provides an opportunity to practice new skills and reinforce learning.

Technical assistance is available from local partners (rural community animator, extension agents, and service providers) who also benefit from in-service training.

Subproject entrepreneurs contribute financially to the execution of their activities. This contribution increases their responsibility and their participation in the success of the activity. Participants provide 100% of the cost of nonspecialized labor, raw materials and transportation. Cost-sharing grants help pay for tools and specialized labor. The objective of the process used to finance subprojects is to mobilize financial resources within the community for local development efforts.

Intervillage exchange programs and visits to countries in the subregion are part of phase 5. These visits allow Project participants to share their experiences and to learn from those of others. Communication activities during the phase promote NRM and related revenue-generating techniques and technologies. They also inform local populations about access to credit and about laws relative to decentralization and the transfer of authority for NRM and the environment.

### Operational Objectives:

- ◆ 97 targeted subprojects are in progress
- ◆ 3,748 participant units have been completed during:

Module 7: NRM techniques\*

Module 8: Financial and technical management of subprojects

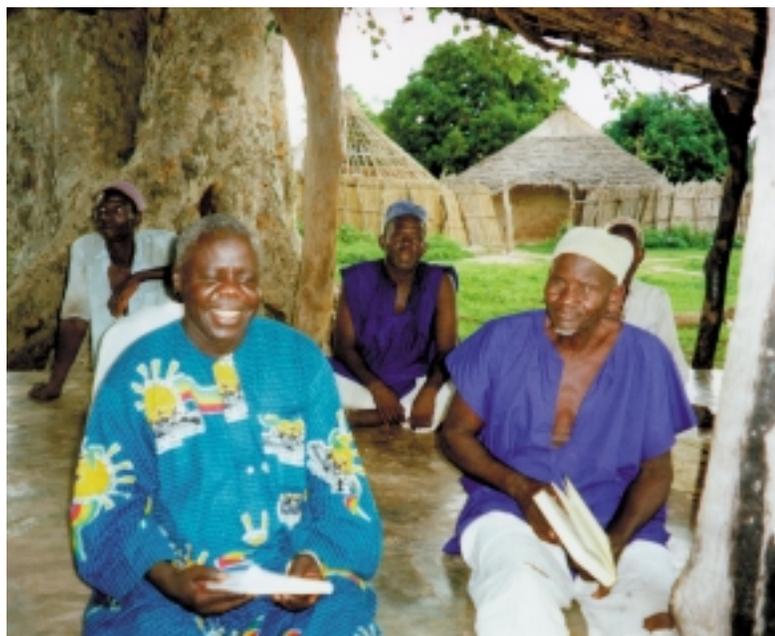
Module 9: Negotiation techniques (Identification of new partners)

Module 11: Reinforcement of stakeholders' entrepreneurial capacities\*

Module 12: Micro-enterprise promotion

Intervillage exchange visits, study tours to the subregion, and workshops at the national and international level

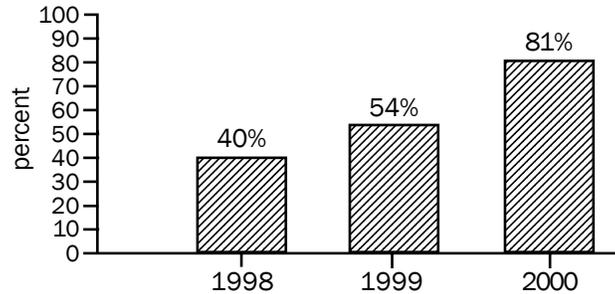
\*managed and/or facilitated by local partners



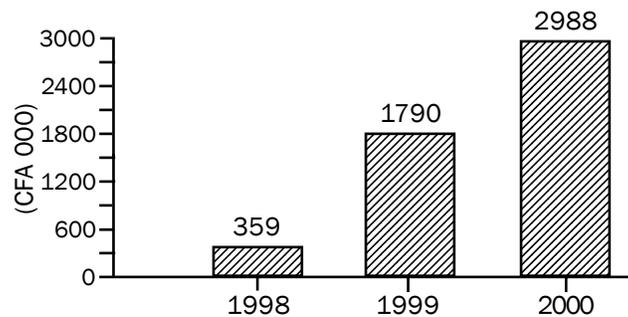
*Rural Council members and NRM committee members visited sites in The Gambia to learn and exchange experiences with land tenure and related NRM issues*

## Results to date:

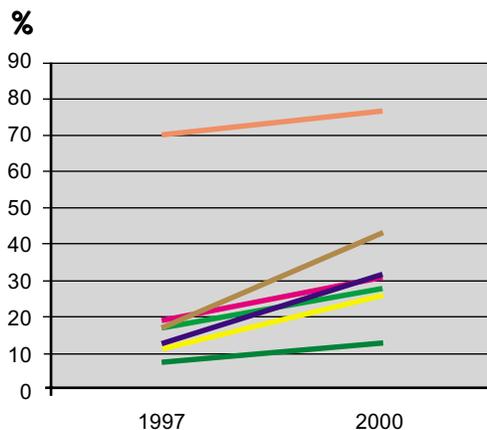
- ◆ **Over 30%** of the local population is participating in the implementation of the land use management plans in the 1st generation rural communities
- ◆ **87%** of contracts, signed with subproject participants, completed in 2000, were successful (93% of contracts signed in 3rd generation communities were successful)
- ◆ **46,000 participating group members** are represented in ongoing subproject contracts in 2000
- ◆ **93%** of local training (measured by participant-units), has been put to practical use (1996-1999)
- ◆ **Continued increase** in the percentage of Rural Communities successfully implementing their land use management plans



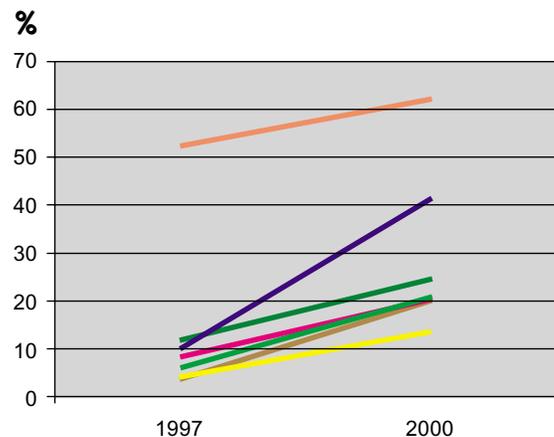
- ◆ **Dramatic rise** in the average local financial contribution by private subproject entrepreneurs per Rural Community



- ◆ Increased adoption of the NRM technologies promoted by the CBNRM Project as a percentage of survey respondents (measured to date in the 1st generation of 5 Rural Communities)



Male heads of household who use improved NRM technologies



Women who report using improved NRM technologies

## Improved local technical assistance

Thanks to CBNRM Project support, the availability and quality of local technical assistance are both improving. A multidisciplinary team of extension agents serves each district, an administrative unit made up of 3-4 Rural Communities (population 45-60,000.) These agents play a vital role in the implementation of the Project's decentralized land use planning and management process, providing needed technical assistance to the NRM committees and to local populations for planning and implementing improved NRM technologies.

Extension agents receive in-service training and report applying close to 100% of what they have learned. The levels of contact with the public and knowledge acquired from agents are still not what the Project has targeted, yet satisfaction levels are high for extension agents in the first generation of Rural Communities where follow-up household surveys have been conducted.



*The Bandafassi extension team's agricultural agent conducts a training exercise in vegetable gardening at the Peace Corps training center in Kedougou*

## Creating sustainable rural enterprise

“Bokk Jom,” a traditional women’s mutual aid group based in the village of Ngayène, registered as an economic interest group (GIE) in 1997 in order to participate in CBNRM Project-sponsored NRM activities. The group includes 89 members, all but two of them women. In Senegal, legal recognition as a GIE confers tax advantages, while opening possibilities to engage in lucrative activities and gain access to credit.

CBNRM Project support for Bokk Jom has included training, cost-sharing grants and monitoring. Group members have lost little time in using their growing organizational skills. In addition to tree-planting, conservation (windbreaks), and compost production, the group has undertaken short-term profit-making ventures such as cattle fattening, operating a small grain mill and the establishment of an agricultural supply store.



*The group digs compost pits near cattle fattening operations and water sources*

## The transformation of Pakane

In 1997, the valley of Pakane, located in the Rural Community of Médina Sabakh, was a barren wasteland. Poor natural resources management practices, such as the progressive removal of tree and plant cover, had led to serious wind erosion, degraded soils, and increased salinization. Despite access to abundant groundwater, agricultural production had fallen sharply and local farmers were forced to purchase hay and fodder for their animals during the dry season.

During the same year, 1997, the economic interest group of Pakane learned of the Rural Community's participation in the CBNRM Project and saw an opportunity to play a role in implementing the newly established land use management plan. The group, formed of 60 men and 60 women from villages adjacent to the valley, submitted a proposal to the local NRM Committee that was approved as part of a subproject targeting the restoration of the valley's soil fertility. Spurred by the support of the NRM Committee, the group has worked to restore ecological conditions conducive to improved and expanded agricultural production.

By the end of the year 2000, many hectares of unusable land had been recovered. The key element to this transformation was the establishment of over 20 kilometers of windbreaks made of multiple rows of fast-growing *Eucalyptus* trees. The presence of the trees provides a protected environment that has allowed the return of small woody and grassy plant species, as well as small animal species that had virtually disappeared from the valley. Group members also claim that the trees have reduced the salt content of the soils.

A look at the economic group's books shows that, over the past four years, their vegetable and rice production has increased fourfold, millet and groundnut production has doubled, and they have been able to add new activities including the establishment of a 5 hectare fruit orchard, seedling production and sales, and a profitable agricultural supply store.

The results from Pakane are impressive. The CBNRM Project hopes to motivate others throughout the country to take action necessary to improve their own environmental conditions. The economic interest group of Pakane has received visits as part of the Project's intervillage exchange program and has been the subject of radio and televised reports made by the Project's audiovisual unit. The group members deserve credit for a job well done.



“Pakane 1997”



“Pakane 2000”

## Sharing knowledge and understanding

The CBNRM Project provides an opportunity for all its partners to share knowledge and experiences of NRM-related issues. District and regional training sessions bring Project stakeholders with similar needs and objectives together to learn and collaborate. Intervillage exchanges provide an opportunity for participants to visit NRM activities within Senegal in order to talk with those responsible. Third country study tours expand the NRM horizon even further, and study tours to the USA provide an opportunity for national experts to witness American implementation of NRM technologies and policies and to discuss with experts there.

US expertise is also on hand in Senegal through the chief of party and technical advisors who are part of the Project Management Unit as well as through experts from many fields, who provide short-term technical assistance. This assistance is provided in conjunction with in-country technical expertise. This team approach to technical assistance increases efficiency and benefits the Project. Local experts gain access to new or different methods, while lessons learned in Senegal broaden US experts' understanding of NRM issues. These lessons can then be shared with colleagues and students at home.

The United States Agency for International Development (USAID) and the South-East Consortium for International Development (SECID) signed a cooperative agreement within the framework of the CBNRM Project. Virginia Polytechnic Institute and State University (Virginia Tech) is the institution responsible for technical implementation of the Project in collaboration with Senegal's Ministry of the Environment, which is responsible for technical oversight of the Project.



*Virginia Tech staff member and CBNRM Project technical advisor Kent Elbow assists with participatory mapping activities*



*Virginia Tech staff member Teresa Wynn provides assistance to the CBNRM Project by conducting a management feasibility study of small water ponds*

# The CBNRM Project is ...

## **Increasing Community Participation**

The establishment of an organizational mechanism, the Natural Resources Management (NRM) Committee, for community-based NRM in each targeted rural community has been the central element of the Project's strategy. All have adopted principles of transparency and democratic participation.

To date, nearly half of the heads of household and leading wives have participated in meetings organized by the NRM committees and one third are directly involved in the implementation of their rural community's land use management plan. Women have taken increasingly important leadership roles.

## **Increasing Revenues**

The expectation that increased local participation in NRM and adoption of improved NRM technologies will lead to enhanced revenues is supported by research and has been confirmed by local populations who have enthusiastically participated in the CBNRM Project process.

Financial analyses conducted by the Project estimate increased local revenues of over \$783,000 during the next five years in the five rural communities located in the Peanut Basin, alone. This increase is based on current Project supported trends in the adoption of improved technologies. Other benefits will be felt over a longer period of time. The studies did not take into account financial savings, reduced demand for labor, and possibilities for new economic activities that come following adoption of improved practices.

## **Improving the environment**

Poor NRM practices, such as the progressive removal of tree and plant cover, has led to serious erosion and degraded soils in much of Senegal. The adoption of improved NRM technologies, as identified in local land use management plans (LUMP) are reversing this trend. The most obvious benefits to rural populations are those that increase agricultural production. Local planning, NRM awareness, training, and available and knowledgeable extension agents are key to the increases in adoption of improved NRM technologies in CBNRM Project supported Rural Communities.

Increased adoption of improved NRM techniques not only stabilizes agricultural, livestock and forest production and makes them sustainable, it is the centerpiece of the strategy to achieve increased revenues by rural populations.

# CBNRM Project partners:

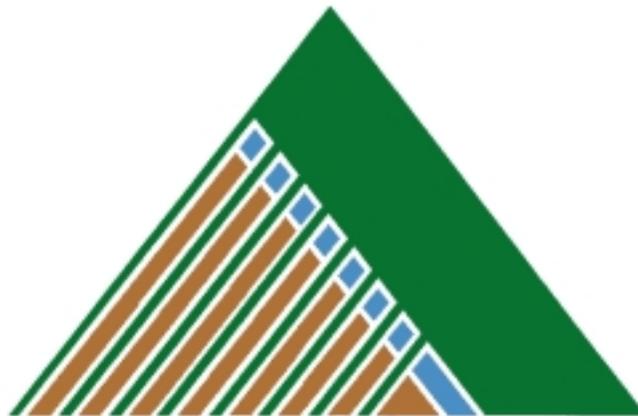
**Ministry of the Environment**

**South-East Consortium of International Development**

**Virginia Polytechnic Institute and State University**



The CBNRM Project is a product of cooperation between the governments of Senegal and the United States of America. Since its inception in October 1994 the CBNRM Project has promoted a process to *increase local community participation in the identification, planning, use, and conservation of natural resource, in order to increase private sector income derived from the exploitation of natural resources, consistent with decentralized, sustainable natural resource management that contributes to an improvement in soil productivity.* The hypothesis that community participation and the adoption of improved NRM technologies will lead to increased revenue is founded on research based on the conviction of local populations who participate fully in project activities.



**Community-Based Natural Resources Management Project**  
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